Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently amended) A composition comprising a ~~polypeptide in~~ crystalline form of ~~, wherein the polypeptide is~~ a TNF-α-converting enzyme (TACE) polypeptide, ~~and~~ wherein the crystalline form of the TACE polypeptide ~~crystal~~ is of monoclinic space group $P2_1$ and has unit cell dimensions a=61.38 Å, b=126.27 Å, c=81.27 Å, and β=107.41°.

2. (Previously presented) A composition according to claim 1, wherein the TACE polypeptide comprises a TACE catalytic domain (TCD).

3. (Original) A composition according to claim 1, wherein the TACE polypeptide is the expression product of a polynucleotide encoding a pro domain and a catalytic domain of TACE.

4. (Original) A composition according to claim 1, wherein the TACE polypeptide is the expression product of a polynucleotide encoding amino acid residues 1-477 of TACE as set forth in SEQ ID NO:8.

5. (Currently amended) A composition according to claim 4, wherein the ~~polynucleotide~~ TACE polypeptide of SEQ ID NO:8 is further substituted such that amino acid residue Ser266 ~~as set forth in SEQ ID NO:8~~ is changed to Ala and amino acid residue ~~Asn542~~ Asn452 ~~as set forth in SEQ ID NO:8~~ is changed to Gln, and comprises the ~~wherein a second polynucleotide encoding~~ sequence Gly-Ser-$(His)_6$ (SEQ ID NO:2) ~~is~~ fused to the C-terminus.

6. (Cancelled)

7. (Currently amended) A composition according to claim [[6]] 1, ~~wherein the binding partner is~~ further comprising a hydroxamate-based binding partner.

8. (Currently amended) A composition according to claim [[6]] 7, wherein the hydroxamate-based binding partner is N-{D,L-2-(hydroxyaminocarbonyl)methyl-4-methylpentanoyl}-L-3-amino-2-dimethylbutanoyl-L-alanine,2-(amino)ethyl amide.

9. (Currently amended) A composition according to claim 1, wherein the crystal diffracts x-rays to 2.0 Å.

10. (Canceled)

11. (Currently amended) A composition according to claim 2 ~~1~~, wherein the unit cell of the crystal comprises four crystallographically independent TACE catalytic domains ~~domain (TCD) molecules~~ of the TACE polypeptide.

12. (Currently amended) A composition according to claim 11, wherein the TACE catalytic domains of the TACE polypeptide ~~TCD molecules~~ are in an asymmetric unit.

13. (Cancelled)

14. (Currently amended) A composition according to claim 1, wherein the ~~the~~ crystalline form of the TACE polypeptide ~~crystal~~ has the structure coordinates according to Table 1.

15. (Currently amended) A method for crystallizing a TACE polypeptide, comprising:

(A) mixing a solution comprising:

(i) a TACE polypeptide, wherein the TACE polypeptide is the expression product of a polynucleotide encoding amino acid residues 1-477 of TACE as set forth in SEQ ID NO:8; and

(ii) a hydroxamate-based binding partner,

with a crystallization buffer, wherein the crystallization buffer comprises sodium citrate; and

(B) crystallizing the mixture of step (A) by drop vapor diffusion to form a crystalline precipitate.

16. (Original) The method according to claim 15, further comprising:

(C) transferring seeds from the crystalline precipitate formed by the drop vapor diffusion, along with a crystallization promoter, into a mixture of a concentrated solution comprising a TACE polypeptide and binding partner substrate, and a crystallization buffer; and

(D) crystallizing the mixture of step (C) by drop vapor diffusion to form a crystal.

17. (Currently amended) The method of claim 15, wherein said crystallization buffer is selected from the group consisting of 0.1M Na Citrate pH 5.4, 20% w/v PEG 4000, and 20% v/v isopropanol; 0.1 M Na Citrate pH 5.0 and 40% v/v ethanol; and 0.1M Na Citrate pH 8.7, 20% w/v PEG 4000, and 20% v/v isopropanol.

18. (Currently amended) The method of claim 15, wherein the hydroxamate-based binding partner is ~~N-{D,L-2-(hydroxyam-inocarbonyl)methyl-4-methylpentanoyl}-L-3-amino-2-dimethylbutanoyl-L-alanine, 2-(amino)ethyl amide~~ N-{D,L-2-(hydroxyaminocarbonyl)methyl-4-methylpentanoyl}-L-3 -amino-2-dimethylbutanoyl-L-alanine, 2-(amino)ethyl amide.

19. (Original) The method of claim 15, wherein crystallization is at a temperature ranging from 4 to 20 degrees Celsius.

20. (Original) The method of claim 15, wherein the solution comprising the TACE polypeptide and the binding partner is at a concentration of about 5 mg/mL to about 12 mg/mL in a buffer.

21. (Original) The method of claim 20, wherein the solution is mixed with the crystallization buffer in a 1:1 ratio.

22. (Previously presented) A TACE crystal made by co-crystallizing a TACE polypeptide with a ~~co-crystallization substrate~~ hydroxamate-based binding partner, wherein the TACE crystal is of monoclinic space group $P2_1$ and has the unit cell dimensions a=61.38 Å, b=126.27 Å, c=81.27 Å, and β=107.41°.

23-28. (Canceled)

29. (Original) The TACE crystal of claim 22, wherein the TACE polypeptide is the expression product of a polynucleotide encoding comprises amino acid residues 1-477 of TACE as set forth in SEQ ID NO:8.

30. (Currently amended) The TACE crystal of claim 22, wherein the crystal of the TACE polypeptide has the structure coordinates according to Table 1.

31. (Currently amended) The TACE crystal of claim 22, wherein the hydroxamate-based binding partner ~~substrate~~ is ~~N-{D,L-2-(hydroxyam inocarbonyl)methyl-4-methylpentanoyl}-L-3-amino-2-dimethylbutanoyl-L-alanine,-2-(amino)ethyl amide~~ N-{D,L-2-(hydroxyaminocarbonyl)methyl-4-methylpentanoyl}-L-3 -amino-2-dimethylbutanoyl-L-alanine, 2-(amino)ethyl amide.